

# Bushfire Assessment Report

***Proposed:***  
**Manufactured Home  
Estate**

***At:***  
**1064 New England  
Highway, Lochinvar**

*Reference Number: 240872*

**28 August 2024**



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Version Control				
Version	Date	Author	Reviewed by	Details
1	28/08/2024	Andrew Muirhead	Ian Tyerman	Final Report

## List of Abbreviations:

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APZ	Asset Protection Zone
AS3959	Australian Standard 3959 'Construction of buildings in bushfire-prone areas – 2018
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Maitland City Council
DA	Development Application
ELVIS	Elevation and Depth Foundation Spatial Data
EP&A Act	<i>Environmental Planning and Assessment Act - 1979</i>
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
NASH	National Association of Steel-framed Housing
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – 2019 as amended</i>
ROW	Right of Way
RF Act	<i>Rural Fires Act - 1997</i>
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

## Executive Summary:

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Building Code and Bushfire Hazard Solution P/L has been engaged to prepare an independent Bushfire Assessment Report for a proposed manufactured home estate at 1064 New England Highway, Lochinvar.

The proposed project involves a manufactured housing estate development comprising 206 manufactured home sites, associated communal facilities and open space.

The subject site is depicted on Council's Bushfire Prone Land Map as containing Category 3 Vegetation and therefore is considered 'bushfire prone'.

The vegetation identified posing a hazard to the development site is within neighbouring properties to the northeast, southeast and southwest.

Manufactured home estates are a listed Special Fire Protection Purpose (SFPP) under section 47 of the *Rural Fires Regulation 2022*.

As the proposal involves a listed SFPP development on bushfire prone land it is classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act 1979*. The Development Application subsequently requires a Bushfire Safety Authority from the NSW Rural Fire Service.

SFPP development is assessed under Chapter 6 'Special Fire Protection Purpose Developments' of *Planning for Bush Fire Protection 2019 (PBP)*.

Manufactured homes and moveable dwellings have the capacity to comply with AS3959 and provided there is a mechanism to ensure future compliance with the corresponding Bushfire Attack Level (BAL) Asset Protection Zones (APZs) which meet  $\leq 29\text{kW/m}^2$  can be applied in accordance with section 6.3.2 of PBP.

All proposed sites provide APZs achieving  $\leq 29\text{kW/m}^2$  and will have a restriction requiring the application of the relevant BAL.

As the Community Centre has a floor area of  $< 500\text{m}^2$  we have applied the requirements for Places of Public Assembly (s8.3.11). Therefore, the minimum APZ was subsequently determined from Table A1.12.2 of PBP.

The proposal satisfies all relevant specifications and requirements of PBP.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development.

## 1.0 Introduction

The development proposal relates to the construction of a manufactured home estate, comprising of two hundred and six (206) home sites, associated communal facilities and open space, at 1064 New England Highway, Lochinvar. The subject site and comprises of one (1) existing allotment zoned RU2: Rural Landscape.

The subject property has street frontage to New England Highway to the southeast and abuts private rural allotments to all remaining aspects.

The subject site is depicted on Council's Bushfire Prone Land Map as containing Category 3 Vegetation and therefore is considered to be bushfire prone.

As the proposal involves a listed SFPP development on bushfire prone land it is classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act 1979*. The Development Application subsequently requires a Bushfire Safety Authority from the NSW Rural Fire Service.

This report has been prepared to address the relevant specifications and requirements of Planning for Bush Fire Protection - 2019 (PBP) for Special Fire Protection Purpose (SFPP) development.

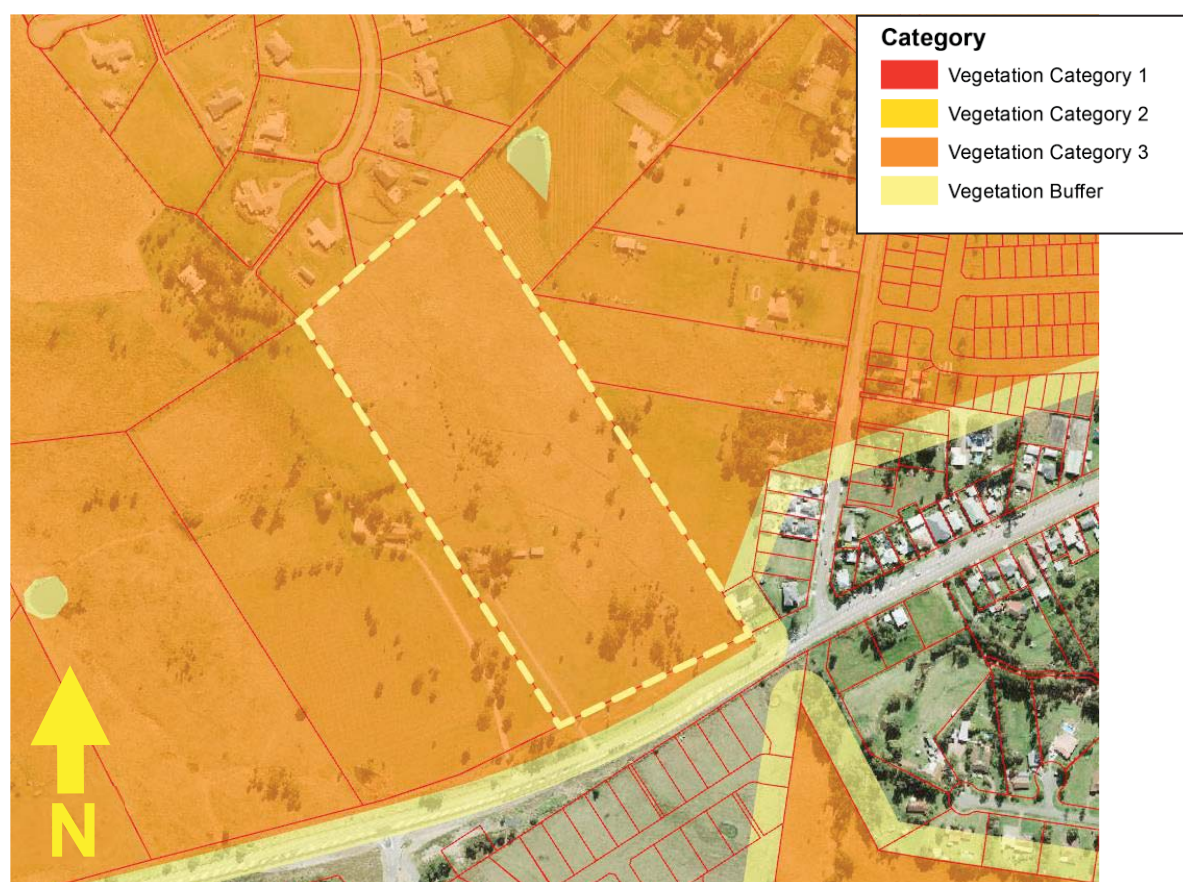


Figure 01: Extract from Maitland City Council's Bushfire Prone Land Map

## 2.0 Legislative Requirements

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The site is subject to the following legislative provisions as it relates to bushfire planning and protection:

- *Environmental Planning & Assessment Act 1979*
- *Rural Fires Act 1997*
- *Rural Fires Regulation 2022*
- *Planning for Bush Fire Protection*

### 2.1 *Rural Fires Act 1997*

Manufactured home estates are a listed Special Fire Protection Purpose (SFPP) under section 47 of the *Rural Fires Regulation 2022*.

The development must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service (RFS) in accordance with section 100B of the *Rural Fires Act 1997*

### 2.2 *Environmental Planning & Assessment Act 1979*

Section 10.3 requires councils, where a Bush Fire Risk Management Plan applies, to record a bush fire prone land map after consulting with the Commissioner of the NSW Rural Fire Service (NSW RFS). The Commissioner will designate lands to be bush fire prone within an area and, when satisfied that the lands have been recorded on a map, certify the map as the Bush Fire Prone Land map.

As the proposal relates to a Special Fire Protection Purpose (SFPP) it is subject to s.100B of the *Rural Fires Act 1997*, and is therefore considered to be integrated development in accordance with s.4.46. This means that the proposed development requires authorisation in respect of bush fire safety because of the SFPP use.

### 2.3 *Rural Fires Regulation 2022*

Section 45 sets out the relevant matters that must be considered when assessing a bushfire safety authority and includes an assessment of the proposal against Planning for Bush Fire Protection.

### 2.4 *Planning for Bush Fire Protection*

As the subject site is identified as being bushfire prone and the proposed development involves a Special Fire Protection Purpose (SFPP) the proposal is subject to the application of the relevant specifications and requirements of Planning for Bush Fire Protection.

The proposal is required to demonstrate that it achieves compliance with the following elements of PBP:

- Chapter 1 - Aim and Objectives
- Chapter 6 - Special Fire Protection Purpose Developments

### 3.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide the NSW Rural Fire Service and Maitland City Council with an independent bushfire assessment together with appropriate recommended bushfire mitigation measures.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that Council and/or the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject Development Application.

### 4.0 Scope of this Report

The scope of this report is limited to providing a bushfire assessment and recommendations for the subject property. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject property.

### 5.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection – 2019*.

#### Community Facility:

	Northeast	East	Southeast	Southwest
<b>Vegetation Structure</b>	Grassland	Managed Land	Managed Land	Grassland
<b>Effective Slope</b>	0 degrees and up	N/A	N/A	5 – 10 degrees down
<b>Required Asset Protection Zone*</b>	10 metres	N/A	N/A	13 metres
<b>Available Asset Protection Zone</b>	>77 metres	>140 metres	>140 metres	>117 metres
<b>Significant Landscape Features</b>	Basin	Proposed access roads / Proposed residential allotments	Proposed access roads / Proposed residential allotments	Proposed access roads / Proposed residential allotments
<b>Bushfire Attack Level</b>	BAL Low	BAL Low	BAL Low	BAL Low

\* Determined from Table A1.12.2 of PBP



<b><u>Dwelling sites:</u></b>	<b>Northeast</b>	<b>East</b>	<b>Southeast</b>	<b>Southwest</b>
<b>Vegetation Structure</b>	Grassland	Managed Land	Grassland	Grassland
<b>Effective Slope</b>	0 degrees and up	N/A	5 – 10 degrees down	5 – 10 degrees down
<b>Required Asset Protection Zone*</b>	10 metres	N/A	13 metres	13 metres
<b>Available Asset Protection Zone</b>	>10 metres	>140 metres	>95 metres	>13 metres
<b>Significant Landscape Features</b>	Neighbouring allotments	Neighbouring allotments	New England Highway	Neighbouring allotments
<b>Bushfire Attack Level</b>	BAL 29	BAL Low	BAL Low	BAL 29

\* Determined from Table A1.12.2 of PBP

<b>Compliance Summary of Bushfire Protection Measures Assessed</b>			
<b>Bushfire Protection Measure</b>	<b>Acceptable Solution</b>	<b>Performance Solution</b>	<b>Report Section</b>
<b>Asset Protection Zones &amp; Landscaping</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
<b>Construction Standard</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
<b>Access</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7.03
<b>Services</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
<b>Emergency Management Planning</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03

## Asset Protection Zones Compliance

Asset Protection Zones for Special Fire Protection Purpose development are determined from Table A1.12.1 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10kW/m<sup>2</sup> at the closest point of the proposed dwelling sites.

Manufactured homes have the capacity to comply with AS3959 and provided there is a mechanism to ensure future compliance with the corresponding Bushfire Attack Level (BAL) Asset Protection Zones (APZs) which meet  $\leq 29\text{kW/m}^2$  can be applied.

All proposed sites will have a restriction requiring the application of the relevant BAL in accordance with the attached BAL Overlay (See Attachment: 01).

The minimum required APZs were subsequently determined from Table A1.12.2 of PBP.

As the Community Centre has a floor area of <500m<sup>2</sup> we have applied the requirements for Places of Public Assembly (s8.3.11). Therefore, the minimum APZ was subsequently determined from Table A1.12.2 of PBP to achieve a maximum radiant heat exposure of 29kW/m<sup>2</sup>.

The proposed sites were found to provide footprints which meet and in most cases exceed the minimum required APZs.

The APZs consist of maintained grounds within the subject property, New England Highway and managed neighbouring allotments.

## Construction Level Compliance

The highest Bushfire Attack Level to the proposed dwelling sites was determined from Table A1.12.5 of PBP.

The future buildings on the proposed dwelling sites are required to comply with the relevant Bushfire Attack Level as shown on the attached Bushfire Attack Level Overlay (Attachment: 01). The highest Bushfire Attack Level applies to the entire building.

## 6.0 Aerial view & Site Plan of the subject allotment

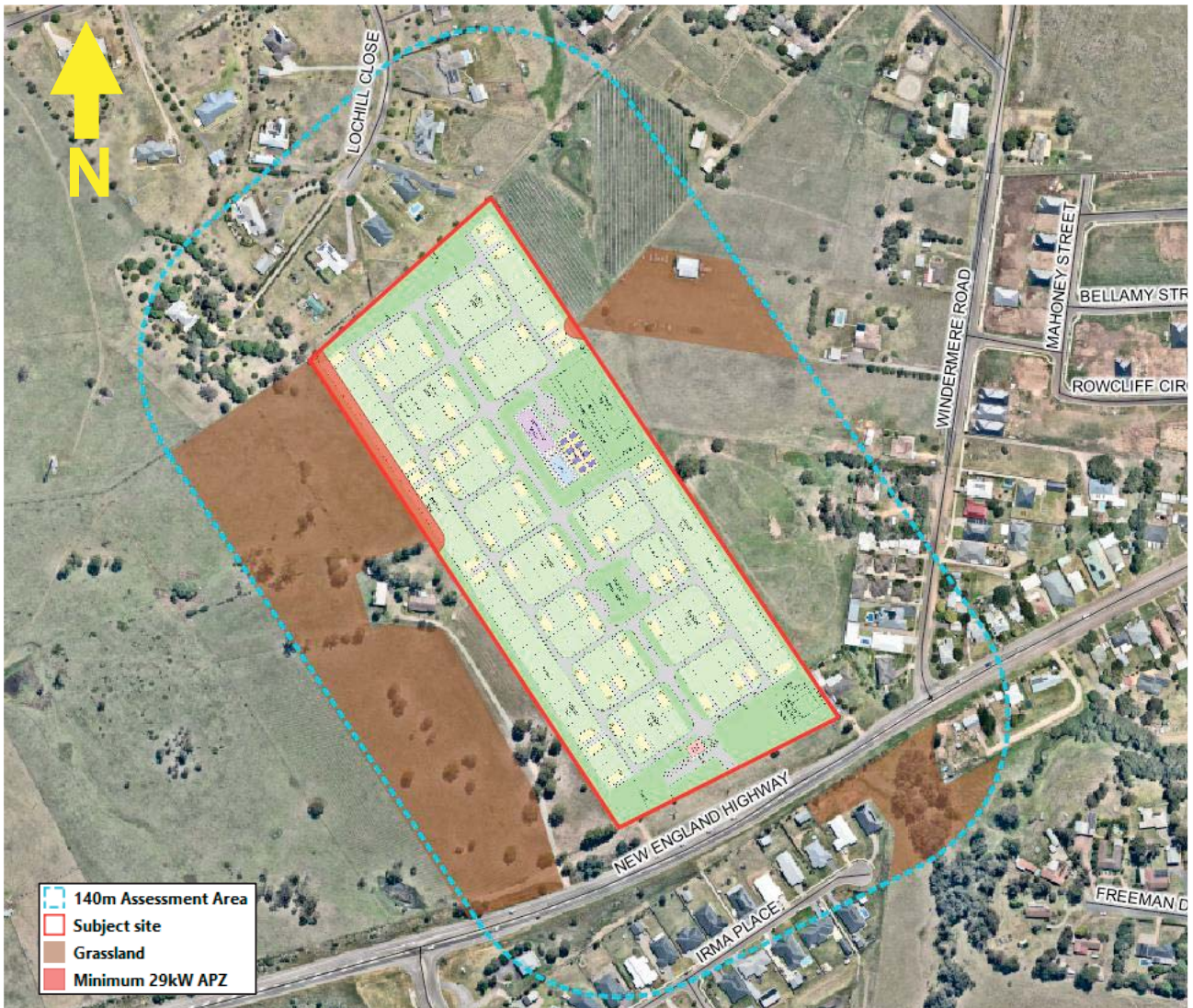


Figure 02: Aerial view of the overall subject site and surrounding area



Figure 03: Site Plan

## 7.0 Site Assessment

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A representative of Building Code & Bushfire Hazard Solutions completed an inspection of the subject site and surrounding area on 15 March 2024.

In addition, the following external data sources have been relied upon for the site assessment:

- Aerial imagery of the subject area (NSW Spatial Services);
- 1 metre contour mapping of the subject area (Elevation and Depth Foundation Spatial Data – Geoscience Australia)
- NSW Planning Portal Spatial Viewer
- Vegetation mapping (NSW Vegetation)
- NSW Bush Fire Prone Land (NSW Rural Fire Service)

### 7.01 Location

The subject site comprises of one (1) existing allotment known as 1064 New England Highway, Lochinvar and legally identified as Lot 2 DP 261947. The site is currently used for agricultural and grazing purposes.

The subject site is located within Maitland City Council and zoned 'RU2: Rural Landscape'.

The subject property has street frontage to New England Highway to the southeast and abuts private rural allotments to all other aspects.

The proposed Community Facility is located centrally within the site.

### 7.02 Vegetation

In accordance with Appendix 1 'Site Assessment Methodology' of PBP we have undertaken an assessment of all vegetation formations within 140 metres of the development site for each aspect as per Keith (2004).

The vegetation identified as posing a hazard was found to be located to the northeast, southeast and southwest of the development site within neighbouring allotments.

The neighbouring private allotments were found to be subject to varying degrees of management (slashing, mowing and grazing). These allotments are zoned RU2: Rural Landscape.

We have reviewed historic high resolution aerial imagery to identify those allotments which present a grassland hazard from time to time. The potential grassland hazard was identified to be within neighbouring allotments to the northeast, southeast and southwest.

The vegetation to the northeast, southeast and southwest was subsequently assessed as a Grassland hazard.

For the purpose of assessment under 'Planning for Bush Fire Protection' the vegetation posing a hazard to the north, west and south has been determined to be Grassland.

Refer to Figure 04 for the vegetation assessment of the identified bushfire / grassfire hazards.

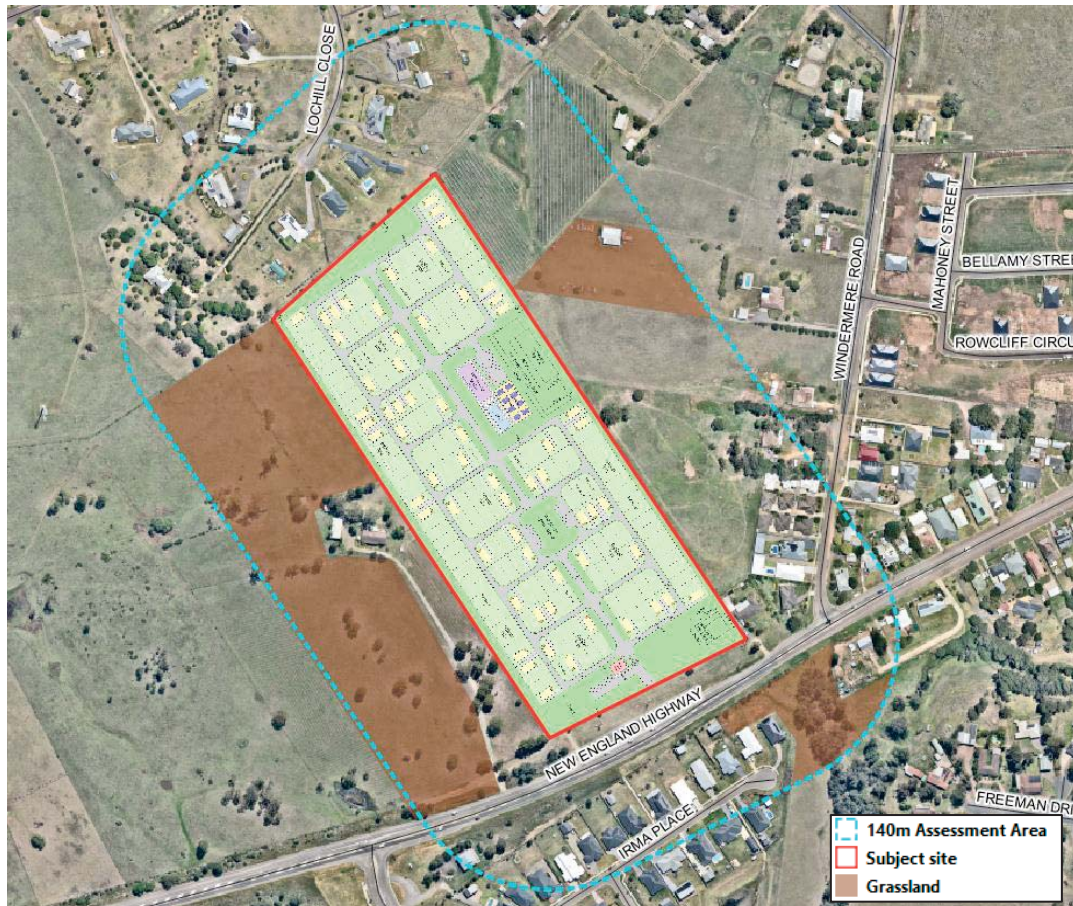


Figure 04: Aerial view of the subject area overlaid with Vegetation Assessment



Photograph 01: Photograph of the vegetation within neighbouring allotment to the west



Photograph 02: Photograph of the vegetation within neighbouring allotment to the northeast



Photograph 03: Photograph of the managed land within neighbouring allotment to the northeast

### 7.03 Slope and Topography

The slope of the land under the classified vegetation has a direct influence on the forward rate of spread, fire intensity and radiant heat exposure. The effective slope is considered to be the slope under the classified vegetation which will most significantly influence bushfire behaviour toward the development site.

In accordance with A1.4 ‘Determine slope’ of PBP the slope assessment is to be derived from the most detailed contour data available.

The slope that would **most significantly** influence bushfire behaviour was determined from topographic imagery (1 metre contours sourced from ELVIS - Geoscience Australia) to be:

- 0 degrees and up within the hazard to the northeast
- 5 - 10 degrees down slope within the hazard to the southeast and southwest
- 0 – 5 degrees down slope within the hazard to the south

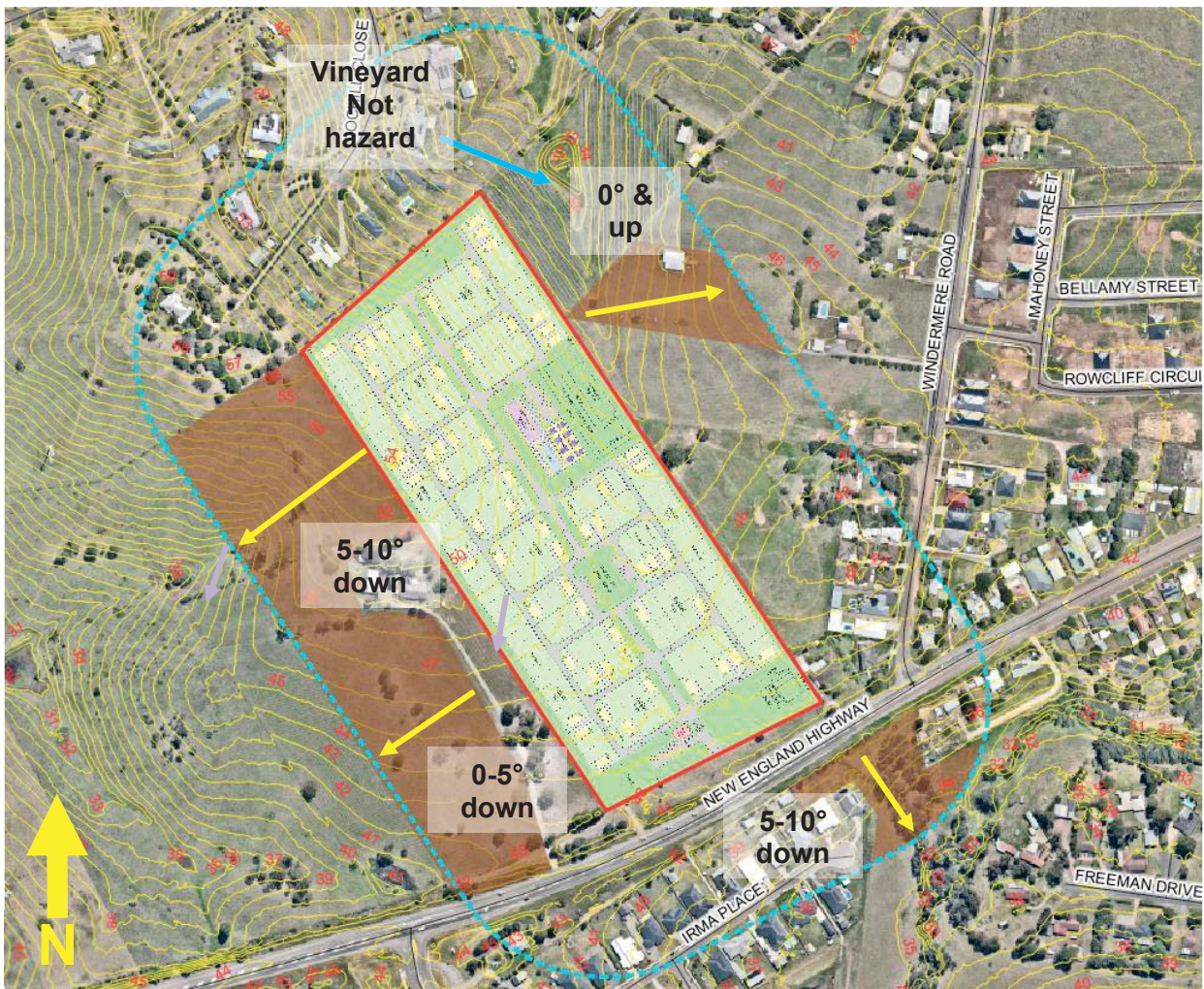


Figure 05: Extract from ELVIS showing 1 metre contours



### 7.04 Fire Weather

All development which attracts an Asset Protection Zone under PBP requires the identification of the relevant Forest Fire Danger Index (FFDI). The FFDI required to be used for development assessment purposes is based on the local government boundaries, being Maitland City Council’s in this instance.

In accordance with the NSW Rural Fire Service publication ‘NSW Local Government Areas FDI’ (2017) Maitland City Council’s form part of the Greater Hunter Fire Weather District and attracts an FFDI of 100.

In acknowledging the presence of Grassland hazard in accordance with Table 5.1.4a of PBP a Grassland Fire Danger Index (GFDI) of 130 has been adopted.

### 7.05 Fire History

There are areas within NSW which have significant fire history and are recognised as known fire paths. While the fire history is more commonly considered as part of strategic planning (to ensure future development is not exposed to an unacceptable risk), it is useful to consider at a Development Application phase to ensure the land is suitable for development in the context of bushfire risk.

In this instance the closest recorded wildfire was found to be located >5.6 kilometre to the southwest of the subject site (source NPWS Fire History dataset). This fire occurred in the 2002-03 fire season.

The subject site is therefore not considered to be within a known fire path.



Figure 05: Fire History curtesy of NPWS



## 8.0 Bushfire Assessment

### 8.01 Planning for Bush Fire Protection - 2019

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and or the Rural Fire Service.

Manufactured home estates are a listed Special Fire Protection Purpose (SFPP) under section 47 of the *Rural Fires Regulation 2022*.

As the proposal involves a listed SFPP development on bushfire prone land it is classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act 1979*. The Development Application subsequently requires a Bushfire Safety Authority from the NSW Rural Fire Service.

SFPP development is assessed under Chapter 6 'Special Fire Protection Purpose Developments' of *Planning for Bush Fire Protection 2019 (PBP)*.

The proposal must conform to the aim and objectives detailed in Chapter 1 'Introduction' and the specific objectives and bushfire protection measures detailed in Chapter 6 'Special Fire Protection Purpose Developments' of PBP.

### 8.02 Specific Objectives

The following table lists the specific objectives for Special Fire Protection Purpose development in accordance with section 6.2 of PBP applicable to the proposal and our comments on compliance or otherwise.

Specific Objective	Comment
<i>minimise levels of radiant heat, localised smoke and ember attack through increased APZ, building design and siting;</i>	The proposal meets and, in most cases exceeds the minimum required Asset Protection Zones.
<i>provide an appropriate operational environment for emergency service personnel during firefighting and emergency management;</i>	The proposed road network meets the requirements of non-perimeter roads and the APZs provide appropriate operational environment.
<i>ensure the capacity of existing infrastructure (such as roads and utilities) can accommodate the increase in demand during emergencies as a result of the development; and</i>	New England Highway, which is the main evacuation route, has a carriageway of >10 metres exceeding the requirements for perimeter roads as described in Table 6.8b of PBP.  The proposal will provide adequate water supply via a hydrant system.
<i>ensure emergency evacuation procedures and management which provides for the special characteristics and needs of occupants.</i>	This assessment includes a recommendation that a Bushfire Emergency Management Plan be prepared.

## 8.03 Bushfire Protection Measures

Section 6.8 'Bush fire protection measures' of PBP outlines the specific Bushfire Protection Measures (BPMs) applicable to Special Fire Protection Purpose development, including APZs, Landscaping, Construction, Access, Services & Emergency Management Plan.

The following section addresses each BMP and the proposals compliance or otherwise.

### Asset Protection Zones & Landscaping

Asset Protection Zones for new Special Fire Protection Purpose (SFPP) development are determined from Table A1.12.1 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10kW/m<sup>2</sup> at the closest point of the proposed dwelling sites and community facility.

Particular SFPP developments demonstrate different characteristics which warrant different levels of protection. Section 6.3.2 of PBP lists specific residential-based SFPP uses, including Manufactured homes estates, and prescribes tailored considerations. In this regard the following is applicable to Manufactured home estates:

*Manufactured housing can be built to achieve all levels of construction required under the NCC. However, SEPP 36—Manufactured Home Estates does not require a separate development consent for each manufactured home after development consent is given for the estate.*

*Due to the nature of manufactured home estates, there is no mechanism within the development consent process to ensure that the dwellings will be constructed to the standards applied within AS 3959 or NASH Standard. Therefore, the acceptable solution for manufactured housing is the provision of an APZ which achieves 10kW/ m<sup>2</sup> commensurate with SFPP development in line with Table A1.12.1.*

*Where evidence can be provided which confirms that dwellings within the manufactured home estate will be constructed to the appropriate construction standards under AS 3959 or NASH Standard, an APZ can be provided which meets 29kW/m<sup>2</sup> in line with Tables A1.12.2 - A1.12.3.*

It is proposed to establish a positive covenant / easement to ensure that the future buildings within the new dwelling sites will be constructed to the appropriate construction standard under AS3959 or the NASH Standard and therefore APZs can be provided which meet 29kW/m<sup>2</sup>.

The minimum required Asset Protections Zones were therefore determined from Table A1.12.2 of *Planning for Bush Fire Protection 2019*.

All proposed sites will have a restriction requiring the application of the relevant BAL in accordance with A1.12.5 of PBP, (See Attachment: 01).

As the Community Centre has a floor area of <500m<sup>2</sup> we have applied the requirements for Places of Public Assembly (s8.3.11). Therefore, the minimum APZ was subsequently determined from Table A1.12.2 of PBP. The proposed building footprint was found to exceed the minimum required APZs.

The APZs consist of maintained grounds within the subject property, New England Highway and managed neighbouring allotments.

All grounds within the subject site will be maintained in accordance with an Inner Protection Area as detailed in Appendix 4 of *Planning for Bush Fire Protection 2019* and the NSW Rural Fire Service publication 'Standards for Asset Protection Zones'.

## Construction

It is proposed to establish a positive covenant / easement to ensure that the future buildings within the new dwelling sites will be constructed to the appropriate construction standard under AS3959 or the NASH Standard and therefore APZs can be provided which meet 29kW/m<sup>2</sup>.

The highest bushfire attack level for the community centre was determined from Table A1.12.5 of PBP to be BAL 12.5. Therefore, the community centre will be constructed to Sections 3 & 5 (BAL 12.5) of AS3959 – 2018 and the additional requirements of s7.5 of Planning for Bush Fire Protection.

The future buildings on the proposed dwelling sites are required to comply with the relevant Bushfire Attack Level as shown on the attached Bushfire Attack Level Overlay. The highest Bushfire Attack Level applies to the entire building.

## Access

The subject site has street frontage to New England Highway to the southeast.

The proposal includes new internal roads inclusive of access to New England Highway to the southeast.

All internal roads comply and exceed the requirements of non-perimeter roads within Table 6.8b of PBP by way of 'one way' internal roads achieving a 4m wide carriageway with no parking and a 6m wide carriageway for the internal 2 way roads with no parking in the carriageway. It is acknowledged that the proposal does not include Perimeter Roads. PBP states the performance criteria for Perimeter Roads is:

*perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.*

The hazards to the northeast and southwest of the site are grassland hazards within neighbouring allotments. Access to these hazards can be from the internal road network, from the access drives, the APZs to the property boundary and within the neighbouring allotments. New England Highway acts as a perimeter road to the southeast.

Persons seeking to egress the proposed dwelling sites will be able to do so via the proposed road and existing road infrastructure.

The proposed road network is considered adequate, and this report includes recommendations for compliance.

## Services – Water, electricity & gas

The hydrant system will be extended along the new internal road to service the proposed residential allotments. The sizing, spacing and pressures of this system must comply with AS2419.1-2021.

The most distant external point of any future dwelling will be within 70 metres of a hydrant which and therefore satisfies the relevant acceptable solutions detailed in Table 5.3c.

In consideration of the available water supply the hydrant network will be adequate for the replenishment of attending fire services.

Recommendations will be included to ensure compliance with the electricity and gas services requirements.

## Bushfire Emergency Management Plan

The intent of the Bushfire Emergency Management Plan measure is to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.

This assessment includes a recommendation that a Bushfire Emergency Management Plan be prepared. This recommendation satisfies the acceptable solutions detailed in Table 6.8d of PBP.

### 8.04 Aim & Objectives

The following table details the aim and objectives of *Planning for Bush Fire Protection 2019* and the proposals ability to comply.

Aim / Objective	Comment
<i>The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.</i>	With the inclusion of the recommendations made herein it is of our opinion that the aim of PBP has been satisfied.
<i>(i) afford buildings and their occupants protection from exposure to a bush fire;</i>	<p>The proposed dwelling sites meet and, in most cases, exceed the minimum required APZ.</p> <p>It is proposed to establish a positive covenant / easement to ensure that the future buildings will be constructed to the relevant construction standard under AS3959 or the NASH Standard.</p> <p>The proposed APZs in conjunction with the application of the corresponding BAL will afford buildings and their occupant's protection from a bush fire.</p>

Objective	Comment
<i>(ii) provide for a defensible space to be located around buildings;</i>	<p>The proposed dwelling sites meet and most cases exceed the minimum required APZ.</p> <p>A suitable defensible space is provided.</p>
<i>(iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;</i>	<p>The proposed APZs in conjunction with the application of the corresponding BAL will prevent the likely fire spread to future buildings.</p>
<i>(iv) ensure that appropriate operational access and egress for emergency service personnel and occupants is available;</i>	<p>The proposed roads provide direct vehicle access to the proposed dwelling sites and appropriate operational access and egress for emergency service personnel and occupants.</p>
<i>(v) provide for ongoing management and maintenance of bush fire protection measures, (BPMs); and</i>	<p>The Asset Protection Zones within the subject site are to be maintained in accordance with the NSW Rural Fire Service’s document ‘Standards for Asset Protection Zones’ and Appendix 4 of <i>Planning for Bush Fire Protection 2019</i>.</p> <p>Any new landscaping is to comply with the provisions of Appendix 4 of PBP.</p>
<i>(vi) ensure that utility services are adequate to meet the needs of firefighters.</i>	<p>The proposed water supply is adequate for the replenishment of attending fire services.</p>

It is of our opinion that the proposal can satisfactorily comply with the aim and objectives of *Planning for Bush Fire Protection 2019*.

## 9.0 Recommendations

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The following recommendations are provided as the minimum necessary for compliance with *Planning for Bush Fire Protection – 2019*. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

### General

1. That the proposed development is to comply with the masterplan prepared by ATJ Architects, Drawing No 2324 A01, Issue B, Date May 24.

### Asset Protection Zones

2. That all grounds within the subject property shall be maintained as an Inner Protection Area as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of *Planning for Bush Fire Protection 2019*.

### Emergency Management

3. That a bushfire emergency / evacuation plan be prepared consistent with the NSW Rural Fire Service Guidelines for the *Preparation of Emergency / Evacuation Plan*.

### Landscaping

4. That any new landscaping within the proposed new dwelling sites is to comply with Appendix 4 of *Planning for Bush Fire Protection 2019*.

### Construction

5. That a positive covenant / easement be established to ensure that the future buildings within the proposed new dwelling sites will be constructed to the relevant construction standard under AS3959 or the NASH Standard.
6. That any future building within the proposed new dwelling sites be constructed to the relevant Bushfire Attack Level (BAL) under Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2018 or the NASH Standard.
7. That any future building required to be constructed to a BAL under AS3959 2018 must also be constructed to the 'Additional Construction Requirements' detailed in section 7.5 of *Planning for Bush Fire Protection 2019*.

## Services (where applicable)

### Water:

9. That the new hydrant system is to comply with the requirements detailed in Table 5.3c of *Planning for Bush Fire Protection* 2019, specifically:
  - fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005;
  - hydrants are not located within any road carriageway;
  - fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
  - all above-ground water service pipes external to the building are metal, including and up to any taps.
  - fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with the relevant clauses of AS 2441:2005 Installation of fire hose reels.

### Electricity:

10. Any new electrical services must comply with Table 6.8c of *Planning for Bush Fire Protection* 2019, specifically:
  - where practicable, electrical transmission lines are underground.
  - where overhead electrical transmission lines are proposed:
    - lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and
    - no part of a tree is closer to a power line than the distance set out in ISSC3 *Guideline for Management Vegetation Near Power Lines*.

### Gas:

11. Any new gas services must comply with Table 6.8c of *Planning for Bush Fire Protection* 2019, specifically:
  - reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, the requirements of relevant authorities, and metal piping is used;
  - all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
  - connections to and from gas cylinders are metal;
  - if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion;
  - polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used; and
  - above-ground gas service pipes external to the building are metal, including and up to any outlets.



## Access

12. That the new internal roads shall comply with the requirements for Non-Perimeter Roads as detailed in Table 5.3b of *Planning for Bush Fire Protection*, specifically:
- property access roads are two-wheel drive, all-weather roads;
  - traffic management devices are constructed to not prohibit access by emergency services vehicles;
  - maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient;
  - the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.
  - hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;
  - hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - Fire hydrant installations System design, installation and commissioning;
  - minimum 5.5m carriageway width kerb to kerb;
  - one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression;
  - parking is provided outside of the carriageway width;
  - curves of roads have a minimum inner radius of 6m;
  - the road crossfall does not exceed 3 degrees; and
  - a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.
  - access is provided to all structures;
  - access roads must provide suitable turning areas in accordance with Appendix 3; and
  - one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.

## 10.0 Conclusion

The proposed project involves a manufactured housing estate development comprising 206 manufactured home sites, associated communal facilities and open space.

The subject site is depicted on Council's Bushfire Prone Land Map as containing Category 3 Vegetation and therefore is considered to be bushfire prone.

This report has been prepared to address the relevant specifications and requirements of Planning for Bush Fire Protection - 2019 (PBP) for Special Fire Protection Purpose (SFPP) development.

The proposal satisfies all relevant specifications and requirements of PBP.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development.

We are therefore in support of the development.

Should you have any enquiries regarding this project please contact our office.

Prepared by  
Building Code & Bushfire Hazard Solutions



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Bachelor of Engineering Technology Mastering in Civil UniSQ  
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BPAD Accreditation No. BPAD46966



Reviewed by  
Building Code & Bushfire Hazard Solutions



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## 11.0 Annexure 01

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### List of Referenced Documents

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Rural Fire Service NSW (2005). *NSW Fire Trail Standards* (Version 2.0, November 2023)

Rural Fire Service NSW (2005). *Standards for Asset Protection Zones*

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Standards Australia (2014). *AS/NZS 1596 The storage and handling of LP Gas*

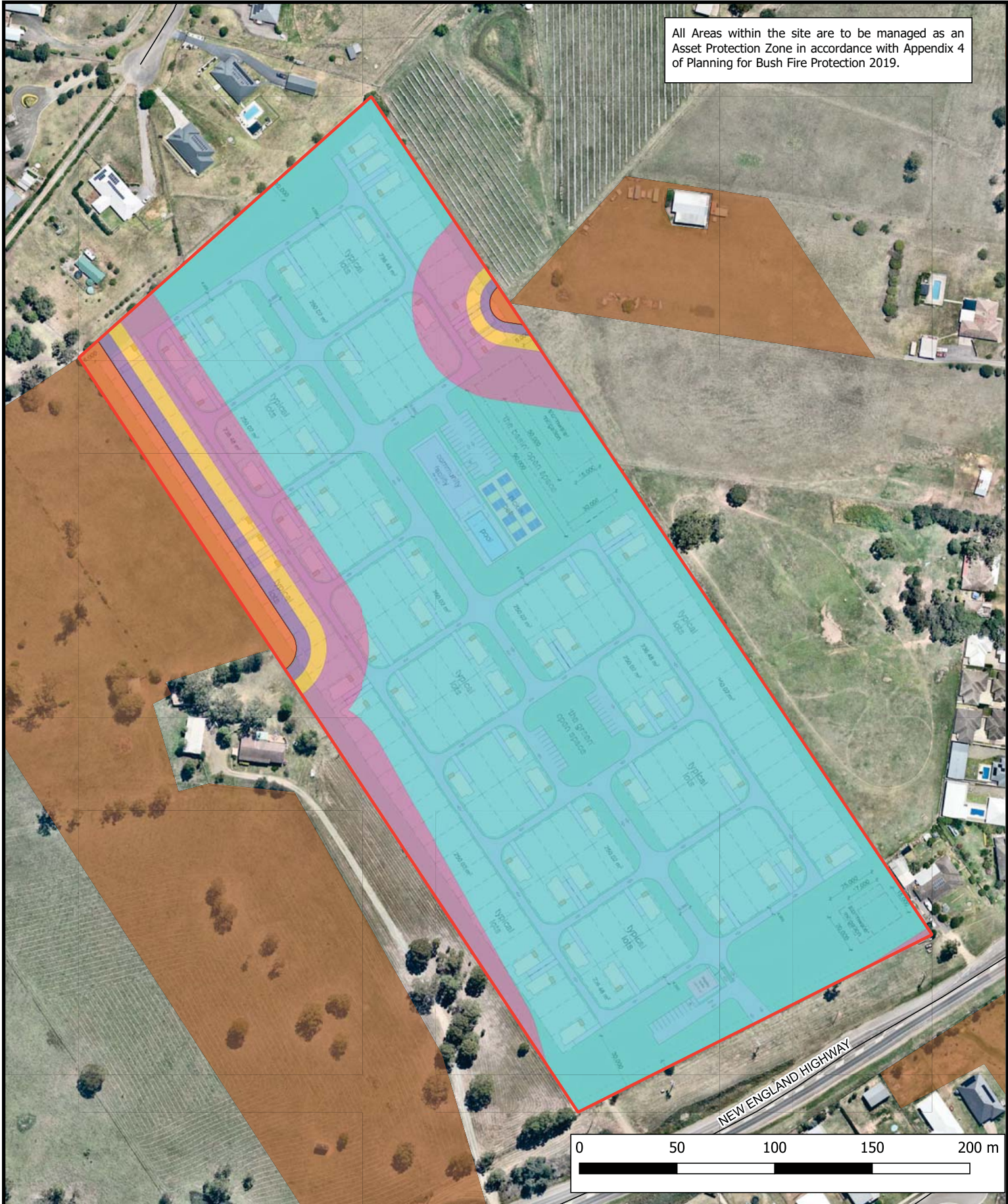
Acknowledgements to:

Geoscience Australia  
Nearmap  
NSW ePlanning Portal  
NSW State Vegetation Type Map

### Attachments

Attachment 01: Bushfire Attack Level Overlay

All Areas within the site are to be managed as an Asset Protection Zone in accordance with Appendix 4 of Planning for Bush Fire Protection 2019.



**Legend**

- Subject site
- BAL 12-5
- BAL 29
- Grassland
- Minimum 29kW APZ
- BAL 19
- BAL Low

BCBHS Ref: 240872  
 Drawn by: AM  
 Dated: 28/08/2024  
 Issue: 1  
 Client: Boycecorp Pty Ltd  
 Address: 1064 New England Highway, Lochinvar



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**Bushfire Attack Level Overlay**